

ESX-MBC

ESX I/O modules

KEY FEATURES

- Control specially designed for use in harsh mobile applications
- J1939/ CANopen
- 200W power outputs

TECHNICAL DATA

- STM32F205 32 bit, 120 MHz
- 128 kB SRAM
- 1 MB Flash
- 32 kB EEPROM
- 1 CAN interface
- 4 half bridges 10A (Combinable to 2 full bridges)
- 4 inputs
- 3 outputs

ACCESSORIES

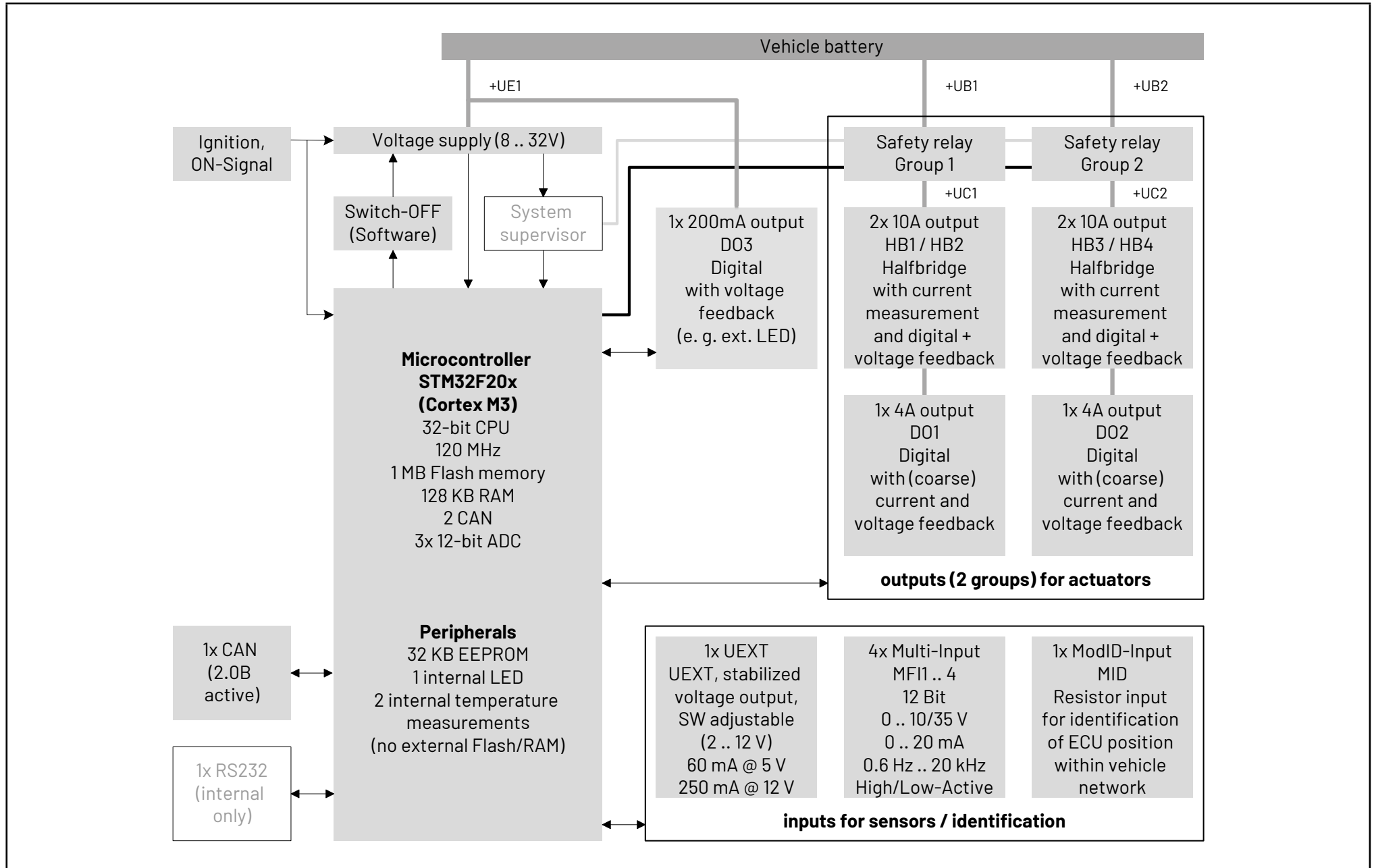
- Mating plug

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BLOCK DIAGRAM



TECHNICAL DATA

Processor and memory

Type	Properties	Features
STM32F205	32 bit	@120 MHz
SRAM	128 kB	
Flash	1 MB	
EEPROM	32 kB	

Communication Interfaces

Type	Max. Quantity	Configuration
CAN	1	CAN 2.0 B, Low- / High-Speed up to 1 Mbit/s

Inputs

Type	Max. Quantity	Configuration	Measurement	Options/Dependencies
Multi Function Inputs	4	Digital inputs	high / low active	
		Frequency inputs	0,6 Hz ... 1 kHz	
		Voltage input	0 ... 10 V	
		Voltage input	0 ... 35 V	
Resistance input	1	Current input	0 ... 20 mA	1 x Module identification

Outputs (All outputs are short circuit protected)

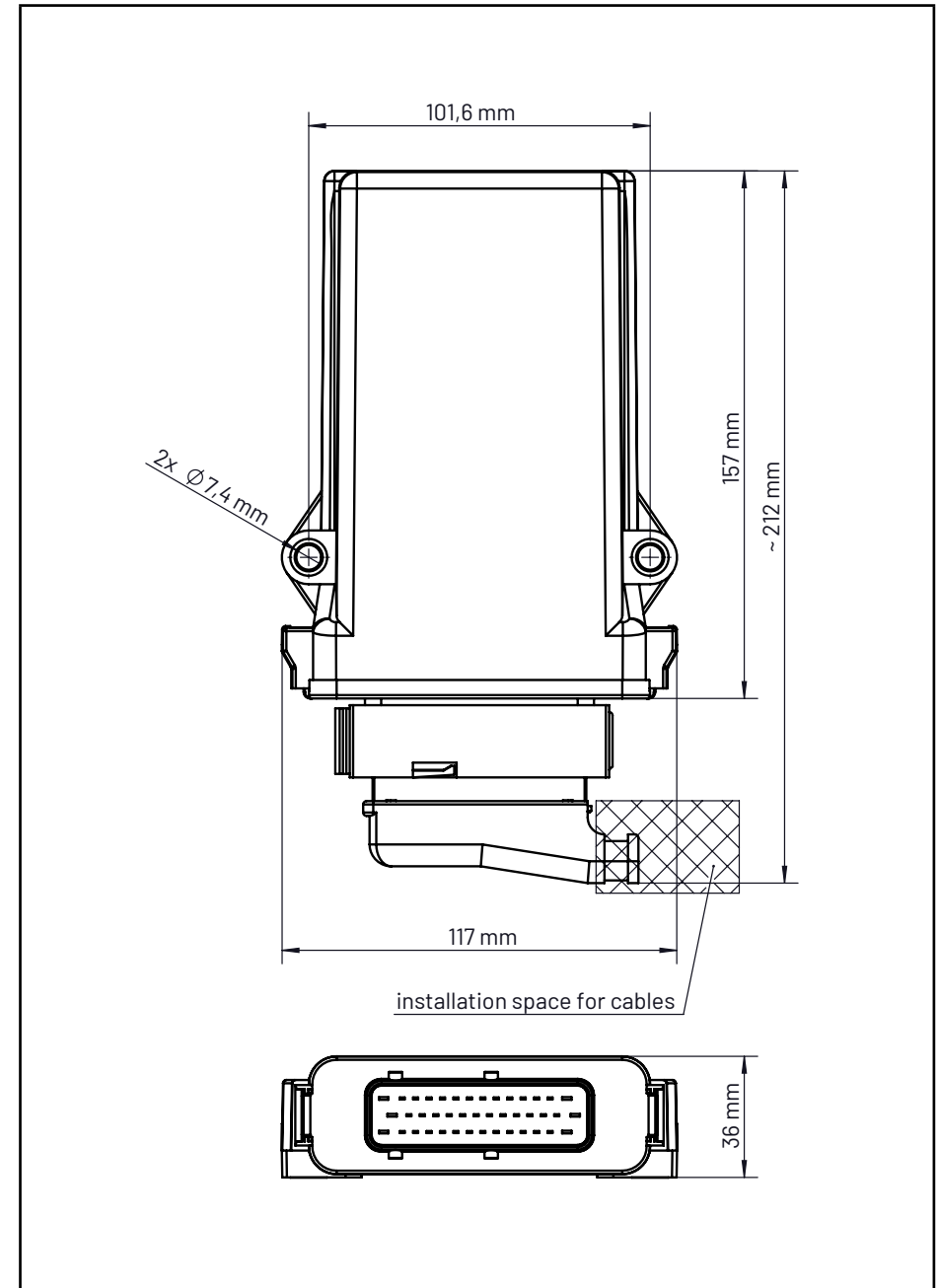
Type	Max. Quantity	Configuration Range	Property	Features
PWM Outputs with current feedback	4	PWM half-bridges, 10 A	PWM frequency up to 20 kHz	diagnosable
Digital outputs	2	digital 4 A		diagnosable, current feedback
	1	digital 200 mA		diagnosable
Stabilised voltage supply	1	5 ... 12 V		max. load 60 ... 250 mA

TECHNICAL DATA

System Data

Type	Property	Values
Supply Voltage	Direct Current (DC)	9...32 V
Current Consumption	Without external load	100 mA @ 12 V 50 mA @ 24 V
	Standby (ignition off)	< 1 mA
	Maximum load current	Up to 30 A max. current throughput (2 x 15 A power pins fully loaded)
Temperature	Chassis Temperature	-40 °C...+85 °C (-40 °F...+185 °F) (Derating depending on operating condition)
Connector	Automotive Type (Tyco/AMP)	42 pin
Housing	Plastic case	
Dimensions	Standard Variant	174 mm x 117 mm x 36 mm
Weight		0.33 kg (0.77 lbs)
Degree of Protection	IP67	
Certificates and Compliance	Qualified to the applicable standards for automotive, agricultural and construction industries	
	CE	

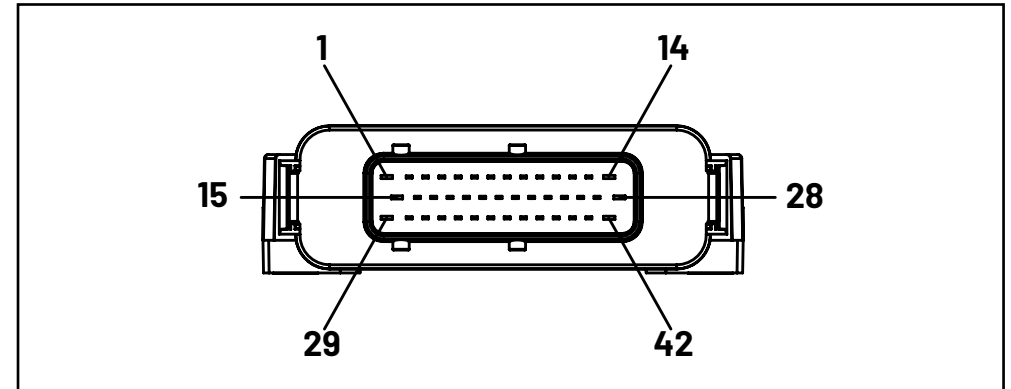
TECHNICAL DRAWING




PIN ASSIGNMENT

Pin assignment 42 pin connector:

Pin	Description	Pin	Description
1	Power supply domain, +UB1	23	Multi-functional input 4, MFI4
2	PWM output / half bridge output 10 A, HB2	24	Resistance input - Module identification input
3	PWM output / half bridge output 10 A, HB2 (GND)	25	Digital output 4 A, DO2
4	Digital output 4 A, DO1	26	PWM output / half bridge output 10 A, HB4 (GND)
5	UE1: Power supply electronic	27	PWM output / half bridge output 10 A, HB4
6	Sensor Supply UExt	28	PWM output / half bridge output 10 A, HB3
7	Sensor Supply UExt	29	Power supply domain, +UB1 (GND)
8	CAN bus 1 high	30	PWM output / half bridge output 10 A, HB1 (GND)
9	CAN bus 1 low	31	PWM output / half bridge output 10 A, HB1 (GND)
10	CAN bus 1 hij	32	Digital output 4 A, DO1 (GND)
11	CAN bus 1 low	33	UE1: Power supply electronic (GND)
12	PWM output / half bridge output 10 A, HB4 (GND)	34	Multi-functional input 1, MFI1 (GND)
13	PWM output / half bridge output 10 A, HB4	35	Multi-functional input 2, MFI2 (GND)
14	Power supply domain, +UB2	36	Multi-functional input 3, MFI3 (GND)
15	PWM output / half bridge output 10 A, HB1	37	Multi-functional input 4, MFI4 (GND)
16	PWM output / half bridge output 10 A, HB2	38	Resistance input - Module identification input (GND)
17	PWM output / half bridge output 10 A, HB2 (GND)	39	Digital output 4 A, DO2 (GND)
18	Ignition (KL15)	40	PWM output / half bridge output 10 A, HB3 (GND)
19	Digital output 200 mA, DO3	41	PWM output / half bridge output 10 A, HB3 (GND)
20	Multi-functional input 1, MFI1	42	Power supply domain, +UB2 (GND)
21	Multi-functional input 2, MFI2		
22	Multi-functional input 3, MFI3		



QUALIFICATION

Norm	Description
ISO/IEC 17050-1	 Conformity Detailed qualification data available on request.